CUTT

Program Spotlight

Many older chemistries on the market today—such as trichlorfon, chlorothalonil and pendimethalin—are applied in pounds of active ingredient per unit area, whereas new chemistries—such as imadocloprid, azoxystrobin and chlorosulfuron—are applied in tenths of ounces or grams per unit area. It follows that simply moving to newer, more active chemistry will result in overall reduced loads.

Is Pesticide Reduction a Numbers Game?

Few issues in the turf industry stir more emotion than the use of pesticides. Considered so essential to our existence, the Canadian government refers to pesticide use in turf as "cosmetic," implying that, beyond aesthetics, there is no functional need for pesticides and their use must be reduced or eliminated.

The drums continue to beat from environmental advocates who demand use reductions as a first step towards possible elimination. Integrated pest management (IPM) is rolled out as the alternative to pesticide use (read elimination) while the turf industry states it is already being implemented.

"How can I wait to see what kind of disease pressure I have for an IPM approach," queries Jeff Wentworth of Pelham Country Club. "If I get anthracnose I will have dead grass on my greens, so I have to spray preventatively." Wentworth's dilemma is common for many with severe pest problems and little curative options.

How can pesticide use be reduced and quality standards remain high? The answers depend on how you calculate use on one hand and whether trying to reduce pesticide use, in some cases, results in improved environmental quality.

By the Numbers

Most pesticide use debates engage a 1990 survey from the New York State Attorney General's office, *Toxic Fairways*. The information was collected from 52 golf courses on New York's Long Island and subsequently has been used to "quantify" the amount of pesticides used on courses. A similar study was conducted to quantify the exposure of school children to pesticides.

The scientists in the Attorney General's office calculated pesticide use on a per acre basis. However, the publication goes on to report on a per *treated* acre basis the numbers are inappropriately inflated.

For example, a crop farm might apply a preemergence herbicide at two pounds of active ingredient per acre to 200 acres then a follow-up postemergence herbicide at two pounds per acre producing a total load of 800 pounds or four pounds per treated acre. A golf course might apply a fungicide at one pound of active ingredient eight times to two acres of greens for a total of 16 pounds of pesticides. However, on a per *treated* acre basis it would be eight pounds per treated acre (twice the amount of pesticides used on the farm).

From an environmental perspective, total loading is much more critical than amount per treated acre in that it quantifies the total amount the environment (soil, air, water, etc.) must confront. So, is it possible to treat as much—or more—acreage and see an overall reduction in pesticide loads?

New Chemistry

Many older chemistries on the market today—such as trichlorfon, chlorothalonil and pendimethalin—are applied in pounds of active ingredient per unit area, whereas new chemistries—such as imadocloprid, azoxystrobin and chlorosulfuron—are applied in tenths of ounces or grams per unit area. It follows that simply moving to newer, more active chemistry will result in overall reduced loads.

In addition to reduced active rates the new chemistries tend to be more highly selective, have reduced nontarget effects and often work preventatively. Clearly, the selectivity and reduced nontarget effects are beneficial, but the preventative approach may serve to increase overall use.

Soil Insect Management

Turfgrass managers have a situation with soil insect management that highlights some important issues. In an effort to reduce widespread insecticide use superintendents could wait to observe white grub populations and then attack curatively with one of the few "rescue" treatment chemicals available, trichlorfon. The active ingredient rates would be four ounces per thousand square feet. In the end, possibly only 10,000 square feet would need treating resulting in a total load of 40 ounces. In addition, this would require intense scouting and proper timing to keep the highest quality turf.

Alternatively, a manager could apply imadocloprid preventatively to all 80,000

square feet of turf at 0.4 ounces per thousand square feet. This would deliver about 32 ounces of material. Also, labor for scouting would be reduced, timing is less critical, the material is considered "softer" on the environment, etc. Why not just treat preventatively if it applies less total material to eight times the area?

This is an important question and one that is not easy to answer. Widespread use of a material with fewer environmental effects could be better than targeted use of a material that poses a greater risk to environmental quality. Also, the preventative approach virtually assures success with minimal technical knowledge beyond application technique.

In fact, a hybrid approach might be the best solution. In areas with a history of problems, treat preventatively; and in areas that have not had trouble, monitor for a curative strategy. This represents a full implementation of IPM with consideration of pest pressure, turf quality thresholds and environmental quality.

Driving Reduction

In the end, we'd all like to think it is more than just a numbers game: manipulate the numbers to make them say what you want them to. Yet, it appears there are a few issues that remain obstacles to meaningful pesticide reduction.

First, consumer expectations for high quality turf is not likely to change and will continue to drive inputs higher. Second, understanding pest biology and ecology that allows for more targeted prevention, rather than widespread prophylactic approaches, must be implemented. Finally, by improving our understanding of pest issues and maximizing good growing conditions, alternatives to chemicals (or at least to the instant gratification of chemical use) will become available.

Frank S. Rossi, Ph.D.

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Building Loyalty

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Effective managers recognize that no one knows more about a job and the challenges of doing a job than the individual who performs that job every day.

5. Provide training and development opportunities. Generally speaking, people want to become more than they are today. They want to grow, learn and become more valuable to themselves as well as to a current and future employer. In addition, employees enjoy doing what they do well. An ongoing process of training and development for each employee will reap big dividends.

Training can be conducted internally or offsite. Many effective turf managers have made very good use of video tapes and other teaching materials at the workplace to give employees the skills they need to do a job effectively. Regardless of how training is done, it is important to reinforce training on the job on a daily and weekly basis until the employee has mastered a particular skill. Some managers fail to get the best results from their training dollars because there is no follow-up to reinforce training.

6. View your compensation package as a total reward system. Nonmonetary compensation includes benefits that do not have tangible value: job security, flexible hours, opportunity for growth, recognition, and friendship. Monetary compensation includes wages and benefits such as insurance, retirement programs, paid leave, etc.

The challenge for any manager is to come up with the right combination of monetary and nonmonetary forms of compensation to create an environment where employees will be motivated. Selecting the compensation elements that motivate both seasonal and year-round employees and provide an attractive work environment is the key to building loyalty and retaining the best employees.

A stable work environment, where turnover is not excessive, benefits the manager and the organization and lowers the direct costs of filling positions. Employers who are constantly building the loyalty of their work force will ultimately lower their turnover costs and create the opportunity to build a productive and satisfied work force over the long term.

Thomas R. Maloney

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